GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

tate of Utah
DEPARTMENT OF NATURAL RESOURCES
Division of Water Rights

MICHAEL R. STYLER
Executive Director
KENT L. JONES
State Engineer/Division Director

MAR 27 2014

ORDER OF THE STATE ENGINEER
For Permanent Change Application Number 49-258 (a38730)

Permanent Change Application Number 49-258 (a38730) in the name of Deseret Generation & Transmission Co-Operative, was filed on February 13, 2013, to add points of diversion, place of use and uses of 15.00 cubic feet per second (cfs) of water as evidenced by Water Right Number 49-258. Heretofore, the water has been diverted from the following points located: (1) Surface - North 1696 feet and West 123 feet from the E¼ Corner of Section 12, T10S, R24E, SLB&M; (2) Surface - South 264 feet and East 660 feet from the NW Corner of Section 14, T10S, R24E, SLB&M; (3) Surface - South 1120 feet and West 600 feet from the NE Corner of Section 7, T10S, R25E, SLB&M; (4) Surface - South 700 feet and East 225 feet from the NW Corner of Section 7, T10S, R25E, SLB&M; (5) Surface - South 1250 feet and West 1580 feet from the NE Corner of Section 7, T10S, R25E, SLB&M; (6) Surface - South 1300 feet and East 2400 feet from the NW Corner of Section 7, T10S, R25E, SLB&M. The water has been used for the irrigation of 10.00 acres from April 1 to October 31, and the indoor domestic requirements of 135 equivalent domestic units from January 1 to December 31, for mining purposes, and for industrial purposes (Mining, retorting, drilling, steam generation, cooling, and sanitation.). The water was to be used in all or portion(s) of Sections 13, 14, 22, 23, 27, 34, T9S, R25E, SLB&M; Sections 12, 13, 14, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 36, T10S, R24E, SLB&M; Sections 3, 4, 5, 6, 7, 18, 19, T10S, R25E, SLB&M; and Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, T11S, R25E, SLB&M.

Hereafter, it is proposed to divert 15.00 cfs of water from the same points as heretofore and from additional points located: (1) Surface - North 1277 feet and East 195 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Direct River Intake No. 1); (2) Surface - North 1261 feet and East 141 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Existing Collector Well No. 2); (3) Surface - North 697 feet and West 683 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Existing Collector Well No. 4); (4) Surface - North 221 feet and West 856 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Proposed Collector Well No. 5); (5) Surface - South 217 feet and West 1301 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 7); (6) Surface - South 413 feet and West 1541 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 8); (7) Surface - South 753 feet and West 2031 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 10); (8) Surface - South 928 feet and West 2274 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 11); (9) Surface - North 1833 feet and East 3382 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 12); (10) Surface - North 1802 feet and East 2758 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 14); (11) Surface - South 1643 feet and West 3250 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 17); (12) Surface - South 1838 feet and West 3473 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 18); (13) Surface -

North 507 feet and West 776 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Direct River Intake No. 4); (14) Surface - North 1898 feet and East 3339 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Direct River Intake No. 5); (15) Surface - North 1734 feet and East 2472 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 15); (16) Surface - South 1595 feet and West 3242 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Direct River Intake No. 6); (17) Surface - North 1233 feet and East 532 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 2); (18) Surface - North 1176 feet and West 166 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Direct River Intake No. 2); (19) Surface - South 1537 feet and West 2961 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 16); (20) Surface - South 2071 feet and West 3663 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 19); (21) Surface - North 895 feet and West 531 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Direct River Intake No. 3); (22) Surface - South 59 feet and West 1037 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 6); (23) Surface - South 557 feet and West 1804 feet from the NE Corner of Section 12, T6S, R22E, SLB&M (Proposed Collector Well No. 9); (24) Surface - North 1877 feet and East 3050 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 13); (25) Surface - North 1064 feet and West 386 feet from the SE Corner of Section 1, T6S, R22E, SLB&M (Existing Collector Well No. 3); (26) Surface - North 1151 feet and East 820 feet from the SW Corner of Section 6, T6S, R23E, SLB&M (Proposed Collector Well No. 1).The nature of use of the water is the same as heretofore but, in addition, the following use is being added: The water is to be used for power steam power generation at Bonanza. The place of use of the water will remain the same as heretofore, but adding all or portion(s) of Sections 23, 24, 25, 26, 35, 36, T8S, R23E, SLB&M; and Sections 1, 2, T9S, R23E, SLB&M.

Notice of the application was published in the Vernal Express on March 27 and April 3, 2013, and a protest was received from United States Bureau of Reclamation (BOR). A hearing was held on September 26, 2013.

Richard Hall and David Crabtree represented the applicant. Mr. Hall explained they do not intend to develop all of the new points of diversion but wanted flexibility when developing new points of diversion. David Crabtree gave a history of the Bonanza Power plant. The first unit is in place and the infrastructure is in place, including the water diversion and delivery system for the second unit. The demand for the electricity has been slow in coming but it appears things are now falling in to place. They intend to complete the second unit and possibly a third.

Justin Record, representing the protestant, explained the BOR is concerned with Flaming Gorge storage water, its marketing, and fish flows in the Green River. The BOR maintains, at some time in the future, the only water available in the Green River downstream of Flaming Gorge Reservoir, without a water service contract, will be accretion flows.

The BOR in its written protest stated:

> Reclamation stores the entire flow of the Green River at Flaming Gorge Dam under a 1958 priority water right. Additionally, we assert that the stored water is delivered to Lake Powell each year pursuant to the Colorado River Storage Project authorization, and our notice to the State Engineer in the annual operating plan. Without a water service contract for water stored in Flaming Gorge, the Green River points of diversion under Change Application Number a38370 would only be entitled to the accretion flows below Flaming Gorge Dam that are available under a 2013 priority date.

The BOR has, in essence, asserted no water released from Flaming Gorge Reservoir is available for diversion and consumptive use in Utah without water service contracts. They are also concerned BOR water rights may be adversely impacted.

The underlying application, reflected in the heretofore of this change application, allows the applicant to divert 15 cfs from the White River, which is a tributary to the Green River. The confluence of these two rivers is approximately 61 river miles downstream of the heretofore and hereafter points of diversion, near the Bonanza Bridge, on the White River. While the hereafter points of diversion, near Jensen, on the Green River are approximately 45 miles upstream of the confluence. The proposed change would divert water from the Green River and deliver the water through an existing diversion and transport system, while leaving the option open of diverting water from the White River.

"Law of the River":

The Colorado River is managed and operated under compacts, Federal laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the "Law of the River." When the Colorado River Compact of 1922 (Compact) was negotiated, the river's average annual flow from 1896 to 1921 at Lee Ferry was thought to be about 17 million acre-feet. Recent evaluations show the river's naturalized flow at Lee Ferry[1] to be about 15.0 million acre-feet over the period 1906-2008.[2] Utah may deplete 23% of the flow allocated to the Upper Colorado River Basin States. The Compact apportions to the Upper Basin States 7.5 million acre-feet of depletion per year provided that an average of 7.5 million acre-feet per year is available to the Lower Colorado River Basin States, as measured at Lee Ferry, and treaty obligations to Mexico are satisfied. Considering current hydrology, Mexican treaty obligations, and other law of the river issues, the Upper Basin may be left with a dependable supply of approximately 6.0 million acre-feet of which Utah's share of the river is currently estimated to be about 1.4 million acre-feet per year. To date, the Upper Basin States have met all of their downstream obligations under the Compact and Law of the River.

---

[1] Also sometimes referred to as Lees Ferry or Lee's Ferry. Data for the stream gage at this location from 1921 to present can be obtained from the USGS (the gage is named USGS 09380000 Colorado River at Lees Ferry, AZ).
[2] U.S. Department of the Interior, Bureau of Reclamation. 2011. *Interim Report No. 1, Colorado River Basin Water Supply and Demand Study, Status Report.* p. SR-2
On the Web at: http://www.usbr.gov/lc/region/programs/crbstudy/Report1/StatusRpt.pdf

Stream flow estimates for the Colorado River Basin, reconstructed from tree ring records spanning hundreds of years, appear to show greater variability in the hydrologic cycle than what has been documented in the historical record of flow measurements.[3] The reconstructed flow record appears to show periods of extreme drought sustained over longer periods of time than any drought documented since the late nineteenth century.

Estimates of long term (1568-1961) mean flow at Lee Ferry, based on the stream flow reconstructions, range from 13.0 million acre-feet to 14.7 million acre-feet. The two most recent reconstructions, Woodhouse et al., published in 2006, (1490-1997) and Meko et al., published in 2007 (762-2005) both arrive at 14.7 million acre-feet as the long term mean flow.[4] Climate projection models appear to predict a wide range of future climate conditions. Predictions from current models range from a slight increase in Colorado River Basin precipitation to a greater than 30% decrease in annual runoff.[5]

To date, the Upper Basin States have met all of their downstream obligations under the Compact and Law of the River. It is estimated that Utah water users currently deplete approximately one million acre-feet annually, which represents an underutilization of Utah's share of the Colorado River allocation. The underlying water right associated with this change application is an approved appropriation that has not yet been developed. Approval of this change application does not constitute a new appropriation of water within the Colorado River Basin although it does constitute a new diversion demand on the Green River near Jensen, Utah, which is part of that Basin.

The Upper Colorado River Basin Compact of 1948, Article IV, provides for curtailment of use by the Upper Basin States in the event they cannot meet the requirement outlined in Article III(d) of the Colorado River Compact. Curtailment quantities and timing are to be determined by the Upper Colorado River Commission based on the principles outlined in Article IV. Each State will administer the curtailment within its own borders. Although Utah is not currently using its full apportionment of the Colorado River, State Engineer water right records indicate over 2 million acre-feet of depletion is potentially possible if all approved applications and water rights of record are fully exercised. The State Engineer cannot rule out the possibility that curtailment may be necessary in the future but notes that, whether implementation of curtailment procedures is the result of hydrologic factors or increases in water use, its implementation would be a reflection that Utah is placing the maximum amount of water possible under the law of the river

---

[3] Meko, D.M., C.A. Woodhouse, C.A. Baisan, T. Knight, J.J. Lukas, M.K. Hughs, and M.W. Salzer. 2007. *Medieval Drought in the Upper Colorado River Basin.* Geophysical Research Letters 2007 34(5), L10705, doi: 10.1029/2007GL029988.

[4] Western Water Assessment, *Colorado River Streamflow, A Paleo Perspective,* Comparison of the Lees Ferry Reconstructions: Online, http://wwa.colorado.edu/treeflow/lees/difference.html, accessed September 2012.

[5] Bureau of Reclamation. 2011. *SECURE Water Act, Section 9503(c) – Reclamation Climate Change and Water 2011.* p. 25-36; see also: National Research Council. 2007. *Colorado River Basin Water Management – Evaluating and Adjusting to Hydroclimate Variability.* The National Academies Press. p. 85-91

to beneficial use. The State Engineer believes that result is consistent with statutory objectives and the water policies of the state.

Substantial water resource development work has been completed throughout the Colorado River Basin to place water to beneficial use. Significant storage projects, Federal, State and private, have been constructed since 1922, including Flaming Gorge dam, that currently allow for storage of four times the mean annual flow of the river.[6] The flexibility provided by storage reservoirs in capturing above average flows on good water years allows the Upper Basin States to meet their needs, and their Compact obligations to the Lower Basin States during drier periods.

However, it is left to the individual Upper Basin States to regulate the development, diversion and depletion of the water apportioned them in the Upper Colorado River Basin Compact. Both the Compact and the Colorado River Storage Project Act include language specifically aimed at preserving such rights to the States.

Article IX (a) of the Upper Colorado River Basin Compact (73-3-10 Utah Code), states:

> No State shall deny the right of the United States of America and, subject to the conditions hereinafter contained, no State shall deny the right of another signatory State, any person, or entity of any signatory State to acquire rights to the use of water or to construct or participate in the construction and use of diversion works and storage reservoirs with appurtenant works canals and conduits in one State for the purpose of diverting, conveying, storing, regulating and releasing water to satisfy the provisions of the Colorado River Compact relating to the obligation of the States of the Upper Division to make deliveries of water at Lee Ferry or for the purpose of diverting, conveying, storing, or regulating water in an upper signatory State for consumptive use in a lower signatory State, when such use is within the apportionment to such lower State made by this Compact. *Such rights shall be subject to the rights of water users in a State in which such reservoirs or works are located, to receive and use water, the use of which is within the apportionment to such State by this Compact.* (Italics added)

Sec. 3 of the Colorado River Storage Project Act, April, 1956 states:

> *It is not the intention of Congress*, in authorizing only those projects designated in section 1 of this Act, and in authorizing priority in planning only those additional projects designated in section 2 of this Act, *to limit, restrict, or otherwise interfere with such comprehensive development as will provide for the consumptive use by States of the Upper Colorado River Basin of waters, the use of which is apportioned to the Upper Colorado River Basin by the Colorado River Compact and to each State thereof by the Upper Colorado River Basin Compact*, nor to preclude consideration and authorization by the Congress of additional projects under the allocations in the compacts as additional needs are indicated. It is the intention of Congress that no dam or reservoir constructed

[6] Bureau of Reclamation. 2011. *SECURE Water Act, Section 9503(c) – Reclamation Climate Change and Water 2011.* p. 19

> under the authorization of this chapter shall be within any national park or monument. (Italics added)

Flaming Gorge water right, operation and hydrologic record:

The BOR's Flaming Gorge application (Water Right Number 41-2963), as approved, was to appropriate 8,000 cfs of water as direct flow and 4,000,000 acre-feet of water as storage. As filed, the project was to, "... consume 2,000 cfs of the direct flow water appropriated and a total of 612,500 acre-feet from both direct flow and storage water." Since that time, 40,000 acre-feet of storage has been segregated for Red Fleet Reservoir, reducing the storage to 3,960,000 acre-feet, and all consumptive uses have been segregated from Water Right Number 41-2963, leaving only the non-consumptive use of power generation and the incidental recreational and domestic uses. Though not specified in the application, the first paragraph of the Colorado River Storage Project Act, April 6, 1956, includes, "... regulating the flow of the river...providing for the control of floods" as a purpose of the Act.

Although Flaming Gorge Dam impounds a significant quantity of the water, little change has occurred in the average annual flows in the Green River below Flaming Gorge dam since the construction of the dam and the initial fill of the reservoir. This is logical, since evaporation is the only significant depletion associated with the BOR's Flaming Gorge water right. Historical flows in the Green River near Flaming Gorge were reviewed. Records for three USGS sites were used to create a continuous record, for the water years, from 1924 to 2012.[7] A comparison was made between average annual flow volumes for the periods 1924-1962 (pre-Flaming Gorge Dam) and 1965-2012 (post-initial fill). The average annual flow volumes for the two periods are virtually the same, 1,453,500 acre-feet pre-dam, and 1,452,104 acre-feet post-initial fill. The difference between pre-dam flows and post-initial fill flows is timing-not quantity. The high flows have been reduced and the low flows have been increased, compared to historic flows, through the operation of the dam. Storage is determined by the increase in water stored in the reservoir. Whatever the inflow to the reservoir, if the quantity of stored water remains constant or increases the outflow by definition is not stored water but simply water passing through the reservoir. Unless spilling, the flow in the Green River below the dam is controlled directly by the BOR through releases but only a portion of the released water is from storage.

The purpose of water releases from Flaming Gorge Reservoir falls into three basic categories; 1) Power generation; 2) Flow regulation; and 3) To satisfy water service contracts - for beneficial use downstream, where the beneficial use is covered under a separate Utah water right. **Once water is released from Flaming Gorge, for power generation and/or flow regulation, it is no longer associated with a water right and is subject to appropriation.** Water, released to satisfy water service contracts, is not subject to appropriation, but rather is appropriated under a

[7] The three periods of record and sites used are as follows:
1924-1938 Green River at Flaming Gorge near Linwood, Utah
1939-1950 data Green River near Linwood, Utah
1951-2012 data Green River near Greendale, Utah

separate application to appropriate. It is anticipated that most of the water, released to satisfy water service contracts, will be covered by applications segregated from the Water Right Number 41-2963 (Flaming Gorge).

The average volume released from Flaming Gorge is slightly more than Utah's adjusted allocation of the Colorado River. Most of the water released is eventually stored in Lake Powell and used to satisfy the flow requirements at Lee Ferry. However, Utah is not using its full allocation under the Upper Colorado River Compact, and for Utah to develop its full allocation, most of the water to be developed must be satisfied by water from the main stem of the Green or Colorado Rivers. Geographically it is likely the majority of Utah's remaining allocation will be developed from the Green River.

Conclusion

Utah has and will continue to meet its Compact obligations on the Colorado River. The approval of this change application does not guarantee the applicant water in the future except as may be available to the applicant under the respective priority of the underlying application. Should curtailment under the Compact be necessary, this application, like all others in the Colorado River Drainage in Utah, is subject to priority distribution under the direction of the State Engineer. Even though under curtailment conditions water rights will be administered based on priority, the potential for rights to be curtailed is not a reason to deny this application.

The BOR's assertion that all water released from or passing through Flaming Gorge Reservoir is unavailable for consumptive use in Utah, unless released to satisfy a water service contract, is unfounded under their Flaming Gorge water right (Water Right Number 41-2963), would interfere with the comprehensive development of Upper Colorado River water necessary for the full consumptive use of water apportioned to Utah by the Upper Colorado River Basin Compact, and appears to be contrary to the intent of Congress.

It is the opinion of the State Engineer that this change application can be approved without adversely affecting existing rights, and although it may be beneficial, to both the protestant and applicant to have a water service contract in place, such contract is not requisite to divert water from the Green River which may have been released from Flaming Gorge Reservoir. The applicant is put on notice that diligence must be shown in pursuing the development of this application, which can be demonstrated by the completion of the project as proposed in the change application.

It is, therefore, **ORDERED** and Permanent Change Application Number 49-258 (a38730) is hereby **APPROVED** subject to prior rights and the following condition(s):

1) Whereas this Change Application has been filed to entirely replace and supersede prior approved Change Application Number 49-258 (a8882), with this approval that prior application is considered to have been **WITHDRAWN**.

2) Whereas this Change Application has been filed to entirely replace and supersede prior unapproved Change Application Number 49-258 (a12789), with this approval that prior application is considered to have been **WITHDRAWN**.

As noted, this approval is granted subject to prior rights. The applicant shall be liable to mitigate or provide compensation for any impairment of or interference with prior rights as such may be stipulated among parties or decreed by a court of competent jurisdiction.

Inasmuch as this application proposes to divert water from a surface source, the applicant is required to contact the Stream Alteration Section of the Division of Water Rights at 801-538-7240 to obtain a Stream Alteration permit in addition to this Permanent Change Application before new construction of diversion works is commenced.

This application is also approved according to the conditions of the current appropriation policy guidelines for the Colorado River Drainage, adopted March 7, 1990.

The applicant is strongly cautioned that other permits may be required before any development of this application can begin and it is the responsibility of the applicant to determine the applicability of and acquisition of such permits. Once all other permits have been acquired, this is your authority to develop the water under the above referenced application which under Sections 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water must be put to beneficial use and proof must be filed on or before **July 31, 2015, under Water Right Number 49-258 (A36730) which is the parent water right**, or a request for extension of time **beyond fifty-years** must be acceptably filed; otherwise the application will be lapsed. This approval is limited to the rights to divert and beneficially use water and does not grant any rights of access to, or use of land or facilities not owned by the applicant.

Proof of beneficial use is evidence to the State Engineer that the water has been fully placed to its intended beneficial use. By law, it must be prepared by a registered engineer or land surveyor, who will certify to the location, uses, and extent of your water right. Upon the submission of proof as required by Section 73-3-16, Utah Code, for this application, the applicant must identify every source of water used under this application and the amount of water used from that source. The proof must also show the capacity of the sources of supply and demonstrate that each source can provide the water claimed to be diverted under this right as well as all other water rights which may be approved to be diverted from those sources.

Failure on your part to comply with the requirements of the applicable statutes may result in the lapsing of this permanent change application and the underlying right.

It is the applicant's responsibility to maintain a current address with this office and to update ownership of their water right. Please notify this office immediately of any change of address or for assistance in updating ownership.

Your contact with this office, should you need it, is with the Eastern Regional Office. The telephone number is 435-247-1514.

This Order is subject to the provisions of Administrative Rule R655-6-17 of the Division of Water Rights and to Sections 63G-4-302, 63G-4-402, and 73-3-14 of the Utah Code which provide for filing either a Request for Reconsideration with the State Engineer or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this Order. However, a Request for Reconsideration is not a prerequisite to filing a court appeal. A court appeal must be filed within 30 days after the date of this Order, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 27th day of March, 2014.

Kent L. Jones, P.E., State Engineer

Mailed a copy of the foregoing Order this 27th day of March, 2014 to:

Deseret Generation & Transmission Co-Operative
10714 South Jordan Gateway
South Jordan, UT 84095

United States Bureau of Reclamation
c/o Curtis A. Pledger
302 East 1860 South
Provo, UT 84606-7317

Division of Water Rights
Stream Alteration Section

BY:
Sonia R. Nava, Applications/Records Secretary